Minutes, 1/22/04 Tevatron BPM Upgrade Meeting
Stephen Wolbers

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The agenda as announced consisted of:

1. Temple/DOE review review.
2. VME crates choice.
3. MVME crate controllers (24xx vs 55xx)
4. Gigabit vs 100 Mbit vs 10 Mbit in the service buildings.
5. Measurements with the beam, updates.

1. Temple review review.

- Steve, Jim, Bob and Mike, among others, attended the Temple review closeout earlier on Thursday and of course Jim gave a talk at the breakout session Wednesday morning. Some of the highlights that were relevant for the Tevatron BPM project:

+ Mention was made of the Tevatron BPM upgrade more than once during the closeout. Some highlights: The TeV BPM upgrade project is on an aggressive timescale. Application software is important in order to take full advantage of the new instrumentation. John Corlett mentioned the Tev BPM and had a few comments.
= simultaneous p and pbar measurements
= orbit feedback requirements?
= bunch-by-bunch requirements?

+ There was some discussion of other BPM projects, in particular MI and transfer lines.

+ There were many comments about the project management, including the milestones (too many for TeV BPM), effort reporting, tracking, etc.

+ Bakul pointed out to me that the summer shutdown is now scheduled for August 23 to November 22, according to some of the talks at the review. This will have to be factored into the Tev BPM commissioning plans.

+ Bob took away 5 things from the review:

= October
= pbars
= October
= software
= October

2. VME crates.

- We have to make some decisions soon and write a purchase requisition for the VME crates required for the project. The delivery timescales are long enough that we need to sort this out and get a purchase requisition moving quickly. Some of the major issues mentioned that are still to be ironed out include crate monitoring and power management, required power, Recycler crate experience, cost, experience with other crates, etc. Steve would like to see these issues resolved ASAP and a requisition written. If this is a different crate from others in AD we should buy spares, or extra spares, depending.

3. MVME VME processor modules

- As with crates we need to make a decision soon on the exact model of MVME VME processor modules that we will purchase for the project. The choices are the 24xx and the 55xx series. The 24xx series is in common use in AD. We probably have the licenses we need to use them. The 55xx series is a newer line with Gbit connectivity. We would need some new licenses to use these. CDF is purchasing 55xx boards. We do know that we need at least 256MB of memory and maybe more (more is usually better). Margaret will investigate, talk to people in AD and elsewhere, and will come up with a recommendation. A requisition here is also needed soon given the long lead times involved.

4. Ethernet connectivity to the Service Buildings:

- There was a discussion of the ethernet connectivity to the service buildings. At the moment we do not have a data rate requirement for the Tevatron BPM system. This is something we should calculate. It is thought that the first turn analysis is the largest data rate driver.

- The "0" service buildings have 100 Mbit ethernet

connectivity, the other service buildings are 10 Mbit. Not sure if they are shared or dedicated to each. All of the buildings have ethernet which is functioning.

- It is clear that this feeds into the installation and commissioning of the BPM system, but we should understand for ourselves what our needs are in terms of connectivity and data rate and make the appropriate requests to AD.

5. Measurements updates

- Rob Kutschke showed some plots and these can be found at : http://home.fnal.gov/~wolbers/bpm/DamperBoard/Test1/Jan10/t2.ps

- The measurements were made with the damper board (HA15) and the Echotek (VA14). Rob compared the damper board and the scope, which are both measuring the VA14 signals and he gets the same answer, which is comforting.

- Using a vertical and horizontal correction, Rob can compute |A(pbar)|/|A(p)|. This looks pretty reasonable. The goal is to compute the pbar position by subtracting the p component in the pbar signal corrected as a function of vertical and horizontal position. This is early work and may require more studies. Rob needs to write up what has been done so far, look at pbar position using this technique, design and carry out studies using protons, and of course do these same measurements with the Echotek board.

6. AOB.

- Bob mentioned that he is working on measuring the TBT resolution of the Echotek in A1.

- Mike Martens reports that the Echotek board position measurement looks very good.

- The near-term schedule has:

11:00-12:00 Monday, January 26
11:15-12:00 Wednesday, January 28
1:30- 3:00 Thursday, January 29